APPENDIX I

SITE-SPECIFIC HEALTH AND SAFETY PLAN

ARSYNCO, INC. PROPERTY
511 13th Street
Carlstadt Borough, Bergen County, NJ

Prepared by:

JMC ENVIRONMENTAL CONSULTANTS, INC.
2109 Bridge Avenue Bldg. B
Point Pleasant, NJ 08742

July 2015

Project Objective: Accident Free Execution

Reviewed by: _____ Date: _____

JMC Environmental Consultants, Inc.

Reviewed by: _____ Date: _____

Arsynco, Inc.

Prepared by: _____ Date: _____

JMC Environmental Consultants, Inc.

TABLE OF CONTENTS

ATTACHMENTS

Attachment A - H&S Forms

Attachment B - Excavation Safety SOP

Attachment C - Heat Stress Management SOP

1.0 INTRODUCTION

1.1 Purpose, Scope and Applicability of the Site Specific Health and Safety Plan

The purpose of this site specific Health and Safety Plan (HASP) is to identify anticipated hazards and the control measures to be implemented at the Arsynco, Inc. Property Project in the Borough of Carlstadt, Bergen County, New Jersey during site remediation activities associated with the TSCA-regulated PCB cleanup. The procedures presented in this HASP are based on the best available information at the time of the plan's preparation, and are intended only for the activities described in this plan.

Applicability of this HASP extends to all JMC Environmental Consultants, Inc. (JMC) employees. This plan must be reviewed by site personnel prior to entering the exclusion zone or contamination reduction zone (decontamination zone). Personnel on site shall be informed of the site emergency response procedures and any potential fire, explosion, health, or safety hazards of the project tasks/operations. This HASP summarizes those hazards in Section 4.0 and defines hazard control measures planned for the site.

Visitors entering the contamination reduction zone and exclusion zone at the site will be required to read and verify compliance with the provisions of this HASP and sign the Health and Safety Sign Off sheet located in Attachment A. In addition, visitors will be expected to comply with relevant OSHA requirements. Visitors will be expected to provide their own personal protective equipment. In the event that a visitor does not adhere to the provisions of this HASP, he/she will be requested to leave the work area.

The requirements and protocols cited in this plan were developed in consideration of current safety standards as defined by OSHA/NIOSH, health effects and standards for known contaminants, and procedures designed to account for the potential for exposure to unknown substances. Specifically, the following reference sources were consulted in developing this plan:

- OSHA 29 CFR 1910.120;
- EPA Standard Operating Safety Guides;
- NIOSH/OSHA/USCG/EPA Occupational Health and Safety Guidelines;
- NIOSH Pocket Guide to Chemical Hazards;
- USEPA National Oil and Hazardous Waste Contingency Plan

1.2 Modifications to the Plan

Revisions to this plan may be made based on conditions encountered during site activities. All revisions to this plan shall be documented on a change form and approved by all the parties that prepared/ approved the original version. A copy of this form is included in Attachment A.

2.0 KEY PERSONNEL AND RESPONSIBILITIES

2.1 Key Personnel

The following personnel have principal responsibility for the implementation and maintenance of health and safety measures during site remediation activities.

Job Function	Name	Phone	Alternate Phone
JMC Response Mgr	Steven Kosch	732-295-2144	732-598-1065
JMC Safety Officer	Steven Kosch	732-295-2144	732-598-1065
JMC H&S Director	James Clabby	732-295-2144	908-963-3965

2.2 Responsibilities

2.2.1 Response Manager

The **Response Manager** is responsible for health and safety "performance" in the field. The Response Manager can temporarily halt work at any time if, in his/her opinion, it is necessary to protect the health and well being of site workers or the general public. Specific responsibilities of the Response Manager include:

- Directing site activities in accordance with the HASP;
- Being aware of and complying with applicable federal, state, and local occupational health and safety regulatory requirements;
- Ensuring that resources called for in the HASP and Work Plan/Operations Plan are on site and operational;
- Verifying that all permits, supporting documentation and clearances for a given task (e.g., utility surveys, health and safety plan, confined space entry permits) are in place;
- Informing the appropriate site management and safety personnel of the activities to be performed each day;
- Providing technical advice during routine operations and emergencies;
- Handling field emergency response situations that may arise;

- Correcting unsafe acts and conditions; and
- Participating in pre-job and daily safety meetings.

2.2.2 Site Health and Safety Officer (SHSO) (RM is Serving as SHSO)

The **Site Health and Safety Officer (SHSO)** has responsibility for ensuring that provisions of each HASP are implemented in the field by JMC employees and subcontractor employees. The SHSO must be trained to implement the requirements in the site specific HASP, including the correct use of monitoring instruments, health and safety criteria for the site, documentation of monitoring results, and actions to take if site conditions change.

The designated SHSO shall continuously evaluate the adequacy of prescribed health and safety procedures and levels of protection against the actual conditions encountered in the field. If an obvious discrepancy exists between the realized hazard(s) and the level of personal protective equipment (either too much or too little), the SHSO shall immediately bring the situation to the attention of the JMC Health and Safety Director (HSD). With the concurrence of the HSD and the Response Manager, the SHSO shall take appropriate corrective action. The SHSO has final on-site authority for matters specifically related to worker health and safety, and emergency situations that require immediate action, including the authority to temporarily cease operations. Additional responsibilities of the SHSO include:

- monitoring site activities for unsafe acts and conditions and initiating their correction;
- monitoring project and site activities for conformance to the site specific HASP;
- overseeing confined space entries and ensuring that confined space entries are done in accordance with the requirements found in the JMC Standard Operating Procedures (SOPs) for confined space entry;
- performing on-site air monitoring and personal sampling as specified in the site specific HASP;
- calibration of instruments;
- maintenance of health and safety equipment and supplies;
- ensuring that work-related injuries and illnesses are properly treated and investigated;
- conducting safety briefings and daily safety meetings;
- maintaining documentation in support of the HASP; and
- participating in a pre-job safety briefing with project personnel to discuss anticipated hazards and their control measures.

2.2.3 JMC Health and Safety Director (HSD)

The **JMC Health and Safety Director (HSD)** shall be responsible for implementing an effective hazardous waste operations health and safety program, and shall have the requisite authority to implement the procedures set forth in the JMC HASP, including the authority to temporarily halt work on a project if necessary to protect employees' safety or health. The HSD may delegate certain duties to the SHSO or to other JMC health and safety personnel, but shall be ultimately responsible for the following:

- overseeing the employee medical surveillance program and interacting with examining physicians as required;
- investigating site histories, performing site characterizations, and assessing site/task specific hazards;
- developing or assessing task specific monitoring procedures, action levels, levels of personal protective equipment (PPE), and health and safety requirements for the site and the HASP;
- performing periodic site inspections/audits;
- following to resolution deficiencies noted during site inspections; and,
- resolve "level of care" conflicts that may arise during conduct of the project.

2.2.4 Foreman, Operators, and Technicians

All site personnel share responsibilities for health and safety. Specific duties include:

- conducting work in accordance with the HASP;
- participating in daily safety meetings/planning; and,
- prompt reporting of incidents and potential health and safety-related problems.

3.0 SITE AND PROJECT DESCRIPTION

3.1 Site Description

The Arsynco property consists of approximately 12.3 acres of land located at the western boundary of the Hackensack Meadowlands area. The Arsynco property is divided into two (2) adjacent tracts of land. The main portion of the site, known as Tract 1, consists of approximately 9.5 acres of land, and formerly contained all production operations. Tract 2 consists of approximately 2.8 acres of undeveloped marshland. No former operations were conducted in the Tract 2 portion of the site. All buildings on the site were demolished following cessation of operations in 1993.

3.2 Project Description

Activities will include removal of metals contaminated soil and backfilling.

- Obtain Permits and Approvals
- Conduct site clearing activities
- Mobilization
- Construct soil erosion, sedimentation, and storm water control features
- Erect hot zone perimeter (high visibility fence)
- Construct vehicle decontamination area
- Excavation and disposal of contaminated soils with PCBs ≥500 ppm.
- Excavation and consolidation of PCB-contaminated soils with PCBs ≥50 & <500 ppm.
- Excavation and disposal of Raney Nickel contaminated soils.
- Disposal of contaminated concrete debris with PCBs ≥500ppm.
- Dust control
- Post excavation soil sampling for confirmation of meeting soil clean-up criteria.
- Backfilling - whether with consolidation soils, or clean material from an off-site source
- Decontaminate equipment
- Demobilize

4.0 HAZARD ANALYSIS

The evaluation of hazards is based upon the knowledge of site background information presented in Section 3.1, and anticipated risks posed by the specific tasks/operations to be performed. Section 4.1 presents a general description of site hazards. Section 4.2 describes the specific hazards associated with each task/activity, and identifies the hazard control measures to be implemented during completion of these tasks. This site in particular has the potential for extreme hazards.

4.1 General Hazard Analysis

Potential Site Hazards and Risk of Exposure:

M	Chemical	H	Trips, slips, falls
M	Biological	N/A	Building Collapse
L	Fire/ explosion	H	Heavy equipment/ vehicular traffic
M	Heat/ Cold Stress	L	Overhead hazards
NA	Asbestos	L	Electrical hazards
H	Machinery/ mechanical equipment	NA	Confined space entry
N/A	Cutting and welding	M	Unstable/uneven terrain
L	Underground utilities	M	Excavation Cave-in
M	Noise	H	Strain/ overexertion

Risk of Exposure Estimates: L – Low M – Medium H – High Unk – Unknown NA – Not Applicable

4.1.1 Physical Hazards

Noise – open cab heavy equipment (no cab glass) produces noise exposures in excess of the permissible exposure limit (90dBA). Operators of these pieces of equipment must wear hearing protection (plugs). Hydraulic excavators do not produce sound levels in excess of 85 dBA. Operators of compressors, pumps, and generators will also wear hearing protection when working within 15 ft. of the equipment for extended periods.

Motor vehicles – obey local traffic laws, use qualified drivers in insured vehicles. Seatbelt use is mandatory. Crew will wear traffic vests when working within 15 feet of public roads. Work areas adjacent to roadways will be protected from traffic and the traveling public will be protected with high visibility traffic control devices (signage, flaggers, barrels and or a-frame barricades with retro-reflective tape).

Heavy Equipment - Minimize the number of ground personnel working around heavy equipment. Workers shall maintain eye contact with operators. Only experienced equipment operators will be permitted to operate heavy equipment. Ground crew stays out of pinch points created by heavy equipment. All machines must be supplied with a fire extinguisher and a back-up horn. Equipment will be inspected each morning, prior to use, to ensure safety equipment and devices (e.g., back-up alarms, brakes, etc.) are fully operational. Operators will use a three point machine mount and dismount facing the machine. Jumping from machines is prohibited. Operators will wear seat belts in machines with Rollover Protection. Operators will make no lifts over ground personnel.

Dump Trucks

- Operators mount and dismount facing the machine using three points of contact
- Do not jump off machines
- Operators wear seatbelts
- Do not attempt to jump from the truck if it begins to rollover
- Maintain fire extinguishers in all trucks
- Maintain cab glass, rearview mirrors, signal lights and back-up alarms
- Keep the cab clear of mud and trash that could effect your ability to operate foot controls
- Stay away from the edges of uncompacted roads and soil piles
- Do not allow riders except buckled in the passenger seat
- Remember that when loaded the truck's center of gravity is higher
- Do not travel with the bed in the up position
- Watch out for overhead powerlines
- Travel at safe speeds
- Watch for ground crew about the machine
- Stop the machine if you lose track of a ground crew member's location
- Load the truck over the tailgate or side. Do not load over the cab
- If it is necessary to get under the bed when it is in the up position use the bed lockout mechanism.

Electrical Hazards – Safe distances from overhead powerlines must be maintained in accordance with the table below. A ground crew member must be assigned as a spotter to any piece of heavy equipment which is working close enough to an overhead line so that a part of the machine may infringe on the safe distance listed below.

System Voltage	Minimum Required Clearance
0 -50 kV	10 ft.
51 - 100 kV	12 ft.
101- 200 kV	15 ft.
201 - 300 kV	20 ft.
301- 500 kV	25 ft.
501 - 750 kV	35 ft.
751 - 1000 kV	45 ft.

Utility installed line insulators may be used to decrease the safe distances to the insulators rated protection distance. For crossings underneath powerlines, crossings will be posted with overhead powerline warning signage and dump trucks will be stopped to lower beds before crossing.

Ground fault - Ground fault protection devices (GFCI) will be provided for electric power tools and extension cords. Electrical conductors will be demolished under the protection of lockout/ tagout. Voltage detectors may be used to verify conductors are not energized.

Underground Utility Protection – Properties to be excavated will be marked out by utility locator prior to excavation. Marking stand-off distances will be maintained. Work within stand-off distances will be performed using hand tools. Notify appropriate utility if a utility is damaged immediately.

Eye Protection - Eye protection is mandatory in work zone areas of the project site at all times.

Head Protection - JMC site safety rules require that hard hats be worn at all times except when in the cab of heavy equipment with Rollover Protection, in a job site trailer or in a vehicle. JMC will supply personnel with hard hats and enforce the wearing of same--NO EXCEPTIONS.

Falling Vegetation – Clearing operations expose operators and ground crew to falling tree limbs and trees. Heavy equipment used for clearing will be equipped with Fall On Protection (FOPS) and ground crew will be kept out of areas being cleared.

Excavation Cave-In – A competent person will be on site during excavation work requiring entry into excavations greater than 4 feet in depth. The competent person will perform excavation inspections. Excavations requiring personnel entry will be stabilized when depths are $\geq$ 5 ft. (e.g.- slide rail system, trench box, etc.). Excavations greater than 4 feet deep will be evaluated for confined space entry hazards prior to personnel entry. Confined Space Entries will be performed in compliance with the JMC Confined Space Entry Standard Operating Procedure located in the attachments to this HASP. Excavation work will be performed in accordance with the JMC Excavation Safety Standard Operating Procedure located in the attachments to this HASP.

When the stability of a structure adjacent to an excavation is endangered, shoring, bracing, or underpinning will be used to ensure the stability of the structure for the protection of employees. Excavation below the level of the base or footing of a structure which may pose a hazard to employees is permitted only when:

- a support system is provided to ensure the safety of employees;
- a PE has approved the determination that the structure is far enough away from the excavation so as to be unaffected; or,
- a PE approves the determination that the excavation work does not pose a hazard to employees.

Soils situated deeper than of 4-feet below grade with PCB concentrations above 50 ppm were identified in an area measuring approximately 250 ft^2 in the southeast part of Tract 1. Based on the current data, this will be the only area in which excavation depths will exceed 4-feet.

Confined Space Entry – Entry into the excavations planned for this site (including excavations ≥ 4ft deep) will be evaluated for Permit Required Confined Space Hazards. When necessary entries will be made using the Confined Space Entry SOP.

High or Elevated Work - Work near an unprotected side or edge (no handrail) which would allow a fall to a lower level of six feet or more is prohibited without the use of fall protection (e.g., anchorage points, body harnesses, taglines with deceleration devices and lifelines). Fall protection equipment will provide continuous protection.

Matches and Flame-producing Devices - Smoking is limited to designated areas after hand and face washing.
Pinch-Point Hazards - Pinch-point injuries can occur when materials and equipment are moved around the site during mobilization, demobilization, and project operations. Pinch-point injuries can be avoided by following the correct procedures for moving equipment and materials and by using protective equipment such as heavy gloves and steel-toed boots. Ground crew members must keep out of pinch points produced by heavy equipment.

Hand Punctures / Lacerations – Wear leather gloves when handling wood, wire, etc.

4.1.2 Biological Hazards

Biological Hazards are expected to pose potential hazards. See Section 12.0 of this HASP for details.

4.1.3 Chemical Hazards

The presence of volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), PCBs and metals have been verified with soil sampling.

Concentrations for contaminants of concern in soil include:

VOCs:

Benzene up to 110 mg/kg
Toluene up to 8,700 mg/kg
Ethylbenzene up to 2,800 mg/kg
Total Xylenes up to 24,000 mg/kg

Chlorobenzene up to 250 mg/kg
4-methyl-2-Pentanone up to 250 mg/kg
Chloroform up to 50 mg/kg
Tetracholoroethene (PCE) up to 14 mg/kg
Trichloroethene (TCE) up to 100 mg/kg
Methylene Chloride up to 740 mg/kg
cis 1,2 Dichloroethene (cis-1,2-DCE) up to 19 mg/kg

SVOCs:

Benzo(a)anthracene up to 22 mg/kg
Benzo(b)fluoranthene up to 17 mg/kg
Benzo(a)pyrene up to 14 mg/kg
Benzo(k)flouranthene up to 6.6 mg/kg
Indeno (1,2,3)pyrene up to 9 mg/kg
Chrysene up to 20 mg/kg
Dibenz(a,h)anthracene up to 3.1 mg/kg
Bis(2-ethylhexyl)phthalate up to 660 mg/kg
Di-n-butylphthalate up to 12,000 mg/kg
Diethylphthalate 3,800 mg/kg
Dimethylphthalate up to 260 mg/kg
Naphthalene up to 1,300 mg/kg
2,6-Dinitrotoluene up to 3.9 mg/kg
2,4-Dinitrotoluene up to 11 mg/kg

Phenolics up to 1,900 mg/kg

PCBs up to 6,200 mg/kg

Metals:

Antimony up to 364 mg/kg
Arsenic up to 155 mg/kg
Cadmium up to 237 mg/kg
Copper up to 4,860 mg/kg
Lead up to 27,000 mg/kg
Mercury up to 987 mg/kg
Nickel up to 3,800 mg/kg
Thallium up to 8.2 mg/kg
Zinc up to 4,420 mg/kg

The presence of volatile organic compounds (VOCs) and metals have been verified with groundwater sampling

Concentrations for contaminants of concern in groundwater include:

VOCs:

Benzene up to 5590 ppb
Toluene up to 83,000 ppb
Ethylbenzene up to 20,000 ppb
Total Xylenes up to 112,000 ppb
Chlorobenzene up to 70.1 ppb
Chloroform up to 52.6 ppb
2-Hexanone up to 1,680 ppb
4-methyl-2-Pentanone up to 40.4 ppb
Chloroethane up to 168 ppb
Tetracholoroethene (PCE) up to 35.5 ppb
Trichloroethene (TCE) up to 19.5 ppb
Methylene Chloride up to 5,020 ppb
cis 1,2 Dichloroethene (cis-1,2-DCE) up to 458 ppb
1,1 Dichloroethene up to 50.9 ppb
1,1,1 Trichloroethane up to 535 ppb
Carbon Tetrachloride up to 3,830 ppb
Vinyl Chloride up to 1,140 ppb

SVOCs:

Di-n-butylphthalate up to 7.17 ppb
Diethylphthalate up to 11.3 ppb
Dimethylphthalate up to 1.62 ppb
Naphthalene up to 7.75 ppb

Metals:

Antimony up to 181 ppb
Arsenic up to 115 ppb
Beryllium up to 2 ppb
Cadmium up to 708 ppb
Chromium up to 76.3 ppb
Copper up to 26.9 ppb
Lead up to 818 ppb

Mercury up to 11.8 ppb
Nickel up to 1060 ppb
Zinc up to 582 ppb

4.1.4 Pyrophoric Hazards

The presence of Raney Nickel has been identified during PCB soil sampling.

Pyrophorics:

Raney Nickel

4.2 Disposal of Pyrophoric Hazards

During the excavation of Raney Nickel, proper PPE for pyrophoric material should be worn. Fire extinguishers or a water source should be within the excavation area. Background air monitoring will be conducted per section 8.6 of this HASP. The Raney Nickel will be excavated and placed into 55 gallon drums filled with Diesel Fuel per the disposal facilities requirements.

SUMMARY OF HEALTH HAZARDS FOR KNOWN SITE CONTAMINANTS

SUBSTANCE	EXPOSURE LIMIT PEL/TLV	IDLH LEVEL	HEALTH EFFECTS	ROUTE OF ENTRY	FIRST AID By Route of Exposure
			VOCs		
Benzene	1 ppm/0.5 ppm	500 ppm	Irritation eyes, skin, nose, respiratory system; dizziness; headache, nausea, staggered gait; anorexia, lassitude (weakness, exhaustion); dermatitis; bone marrow depression;	Inhalation, skin absorption, ingestion, skin and/or eye contact	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately
Toluene	200 ppm/20 ppm	500 ppm	Irritation eyes, nose; lassitude (weakness, exhaustion), confusion, euphoria, dizziness, headache; dilated pupils, lacrimation (discharge of tears); anxiety, muscle fatigue, insomnia; paresthesia; dermatitis; liver, kidney damage	Inhalation, skin absorption, ingestion, skin and/or eye contact	Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately

Ethylbenzene	100 ppm/20 ppm	800 ppm	Irritation eyes, skin, mucous membrane; headache; dermatitis; narcosis, coma	Inhalation, ingestion, skin and/or eye contact	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
Total Xylenes	100 ppm/100 ppm	900 ppm	Irritation eyes, skin, nose, throat; dizziness, excitement, drowsiness, incoordination, staggering gait; corneal vacuolization; anorexia, nausea, vomiting, abdominal pain; dermatitis	Inhalation, skin absorption, ingestion, skin and/or eye contact	Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately
2-Hexanone	100 ppm/20 ppm	1,600 ppm	Irritation eyes, watering, redness and itching; skin, inhalation, ingestion	Inhalation, ingestion, skin and/or eye contact	Eye: Irrigate immediately for 15 minutes Skin: Soap wash promptly Breathing: Respiratory support, mouth to mouth Swallow: Do not induce vomiting, Medical attention immediately
Chloroethane	1,000 ppm/100 ppm	3,800 ppm		Inhalation, skin and/or eye contact	Eye: Irrigate immediately for 15 minutes Skin: Soap wash promptly Breathing: Respiratory support.

Chlorobenzene	75 ppm/10 ppm	1,000 ppm	Irritation eyes, skin, nose; drowsiness, incoordination; central nervous system depression; in animals: liver, lung, kidney injury	Inhalation, ingestion, skin and/or eye contact	Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately
4-methyl-2-Pentanone	100 ppm/20 ppm	500 ppm	Irritation eyes, skin, mucous membrane; headache, narcosis, coma; dermatitis; in animals: liver, kidney damage	Inhalation, ingestion, skin and/or eye contact	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
Chloroform	50 ppm/10 ppm	500 ppm	Irritation eyes, skin; dizziness, mental dullness, nausea, confusion; headache, lassitude (weakness, exhaustion); anesthesia; enlarged liver.	Inhalation, skin absorption, ingestion, skin and/or eye contact	Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately

PCE	100 ppm TWA	150 ppm	Irritation eyes, skin, nose, throat, respiratory system; nausea; flush face, neck; dizziness, incoordination; headache, drowsiness; skin erythema (skin redness); liver damage.	Inhalation, skin absorption, ingestion, skin and/or eye contact	Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately
TCE	100 ppm/50 ppm	1,000 ppm	Irritation eyes, skin; headache, visual disturbance, lassitude (weakness, exhaustion), dizziness, tremor, drowsiness, nausea, vomiting; dermatitis; cardiac arrhythmias, paresthesia; liver injury.	Inhalation, skin absorption, ingestion, skin and/or eye contact	Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately
Methylene Chloride	25 ppm/50 ppm	2,300 ppm	Irritation eyes, skin; lassitude (weakness, exhaustion), drowsiness, dizziness; numbness, tingle limbs; nausea;	inhalation, skin absorption, ingestion, skin and/or eye contact	Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately

1,1 Dichloroethene	none established/5 ppm	None	Irritation eyes, eye damage; skin irritation; inhalation irritation, signs of drunkenness, lung congestion, liver damage; ingestion symptoms of drunkenness and liver damage	inhalation, skin absorption, ingestion, skin and/or eye contact	Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support /medical attention Swallow: Medical attention immediately
1,1 Dichloroethane	100 ppm/100 ppm	3,000 ppm	Irritation eyes; skin irritation; Ingestion; inhalation;	inhalation, skin absorption, ingestion, skin and/or eye contact	Eye: remove contact lenses, seek medical attention; Skin: soap wash; Inhalation: let rest, seek medical attention; Ingestion: do not induce vomiting, seek immediate medical attention
1,1,1 Trichloroethane	350 ppm/350 ppm	700 ppm	Irritation eyes; skin irritation;	inhalation, skin absorption, ingestion, skin and/or eye contact	Eye: flush with water 15 minutes; Skin: soap wash; Ingestion: do not induce vomiting, immediate medical attention; Inhalation: immediate medical attention
Carbon Tetrachloride	10 ppm/5 ppm	200 ppm	Eyes: irritation; skin: irritation, rash, drowsiness, dizziness; ingestion and inhalation headache, digestive disorders, drowsiness, dizziness:	inhalation, skin absorption, ingestion, skin and/or eye contact	Eye: flush with water 15 minutes; Skin: soap wash; Ingestion: drink lots of water, do not induce vomiting, immediate medical attention; Inhalation: immediate medical attention

Vinyl Chloride	1 ppm/1 ppm	None Detected (CA)	Eyes: irritation; skin: irritation, blisters, Ingestion; Inhalation; irritation, nausea, difficulty breathing, irregular heartbeat, headache, drowsiness, dizziness	inhalation, skin absorption, ingestion, skin and/or eye contact	Eye: Irrigate immediately Skin: if frostbite occurs wash with lukewarm water, if not available wrap effected area in blankets: Ingestion/Inhalation; seek medical attention
cis 1,2 DCE	200 ppm/200 ppm	1,000 ppm	Irritation eyes, respiratory system; central nervous system depression	inhalation, ingestion, skin and/or eye contact	Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately
SVOCs					
Benzo(a)anthracene	0.2 mg/m^3/0.2 mg/m^3 (coal tar pitch volatiles)	80 mg/m3	Dermatitis, bronchitis	Inhalation, skin and/or eye contact	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately
Benzo(b)fluoranthene	(coal tar pitch volatiles)	(coal tar pitch volatiles)	N/A	N/A	N/A
Benzo(a)pyrene	(coal tar pitch volatiles)	(coal tar pitch volatiles)	Dermatitis, bronchitis	Inhalation, skin and/or eye contact	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately

Benzo(k)flouranthene	(coal tar pitch volatiles)	(coal tar pitch volatiles)	N/A	N/A	N/A
Indeno (1,2,3)pyrene	(coal tar pitch volatiles)	(coal tar pitch volatiles)	N/A	N/A	N/A
Chrysene	(coal tar pitch volatiles)	(coal tar pitch volatiles)	Dermatitis, bronchitis	Inhalation, skin and/or eye contact	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately
Dibenz(a,h) anthracene	(coal tar pitch volatiles)	(coal tar pitch volatiles)	N/A	N/A	N/A
Bis(2-ethylhexyl) phthalate	5 mg/m^3/none established	5,000 mg/m3 (CA)	N/A	N/A	N/A
Di-n-butylphthalate	5 mg/m^3/5 mg/m^3	4,000 mg/m3	Irritation eyes, upper respiratory system, stomach	Inhalation, ingestion, skin and/or eye contact	Eye: Irrigate immediately Skin: Wash regularly Breathing: Respiratory support Swallow: Medical attention immediately
Diethylphthalate	5 mg/m^3/none established	None Detected	N/A	N/A	N/A
Dimethylphthalate	5 mg/m^3/5 mg/m^3	2,000 mg/m3	Irritation eyes, upper respiratory system; stomach pain	Inhalation, ingestion, skin and/or eye contact	Eye: Irrigate promptly Skin: Wash regularly Breathing: Respiratory support Swallow: Medical attention immediately

Naphthalene	10 ppm/10 ppm	250 ppm	Irritation eyes; headache, confusion, excitement, malaise (vague feeling of discomfort); nausea, vomiting, abdominal pain; irritation bladder; profuse sweating; jaundice; hematuria (blood in the urine), renal shutdown; dermatitis, optical neuritis, corneal damage	Inhalation, skin absorption, ingestion, skin and/or eye contact	Eye: Irrigate immediately Skin: Molten flush immediately/solid-liquid soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately
2,6-Dinitrotoluene	1.5 mg/m^3/0.2 mg/m^3	50 mg/m3 (CA)	N/A	N/A	N/A
2,4-Dinitrotoluene	1.5 mg/m^3/0.2 mg/m^3	50 mg/m3 (CA)	N/A	N/A	N/A
Phenolics	5 ppm/5 ppm	250 ppm TWA	Irritation eyes, nose, throat; anorexia, weight loss; lassitude (weakness, exhaustion), muscle ache, pain; dark urine; cyanosis; liver, kidney damage; skin burns; dermatitis; ochronosis; tremor, convulsions, twitching	Inhalation, skin absorption, ingestion, skin and/or eye contact	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately

PCBs	0.5 mg/m^3 0.5 mg/m^3	5 mg/m3	Irritation eyes, chloracne; liver damage; reproductive effects;	Inhalation, skin absorption, ingestion, skin and/or eye contact	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately
Metals					
Antimony	0.5 mg/m^3/0.5 mg/m^3	50 mg/m3	Irritation of eyes, skin, nose, throat, mouth; coughing; dizziness; headache, nausea, vomiting, diarrhea, stomach cramps, insomnia, anorexia, ability to smell changes	Inhalation Ingestion Contact	Eye: irrigate immed. Skin: soap wash promptly Breath: respiratory support Swallow: immed. Medical attention
Arsenic	0.010 mg/m^3/0.01 mg/m^3	5.0 mg/m3	Cough, sore throat, shortness of breath, weakness, redness, abdominal pain, diarrhea, nausea, vomiting, burning sensation in throat and chest, shock or collapse, unconsciousness.	Inhalation Ingestion Contact	Irrigate eyes immediately; wash skin w/ soap/ water; provide respiratory support if inhaled; if swallowed, rinse mouth and induce vomiting (if conscious) and seek immediate medical attention

Beryllium	0.002 mg/m^3/0.0000 5 mg/m^3	4 mg/m3	Eyes; irritation: skin; lesions: Ingestion; unknown;: Inhalation; irritation to nose, throat, lungs and mucus membranes	Inhalation, ingestion, skin and/or eye contact	Irrigate eyes immediately; wash skin w/ soap/ water; provide respiratory support if inhaled; induce vomiting if ingested and seek immediate medical attention
Cadmium	0.005 mg/m^3/0.01 mg/m^3	9 mg/m3	Pulmonary edema, dyspnea (breathing difficulty), cough, chest tightness, substernal (occurring beneath the sternum) pain; headache; chills, muscle aches; nausea, vomiting, diarrhea; anosmia (loss of the sense of smell), emphysema, proteinuria, mild anemia; [potential occupational carcinogen]	Inhalation Contact Ingestion	Eye: irrigate immed. Contact physician Skin: soap wash promptly. Inhale: remove to fresh air. Ingest contact physician.
Chromium	1mg/m^3/0.5 mg/m^3	250 mg/m3	Skin and Eye irritation	Inhalation, skin and/or eye contact; slight hazard for ingestion	Irrigate eyes immediately; wash skin w/ soap/ water; provide respiratory support if inhaled, medical attention immediately

Copper	1mg/m^3/1 mg/m^3	100 mg/m3	Irritation eyes, respiratory system; cough, dyspnea (breathing difficulty), wheezing	Inhalation, ingestion, skin and/or eye contact	Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately.
Lead	0.05 mg/m^3/0.05 mg/m^3	100 mg/m3	Weakness, insomnia, gingival lead line, abdominal pain, irritated eyes	Inhalation, Ingestion, Contact	Eye: irrigate immed. Skin: soap wash promptly Breath: respiratory support Swallow: immed. Medical attention
Mercury (inorganic)	0.1 mg/m^3/0.25 mg/m^3	10 mg/m3	Irritation eyes, skin; cough, chest pain, dyspnea (breathing difficulty), bronchitis, pneumonitis; tremor, insomnia, irritability, indecision, headache, lassitude; stomatitis, salivation; gastrointestinal disturbance, anorexia, weight loss; proteinuria	Inhalation, skin absorption, ingestion, skin and/or eye contact	Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately
Nickel	1.0 mg/m^3/0.2 mg/m^3	10 mg/m3	Sensitization dermatitis, allergic asthma, pneumonitis; [potential occupational carcinogen]	Inhalation, ingestion, skin and/or eye contact	Skin: Water flush immediately Breathing: Respiratory support Swallow: Medical attention immediately

Thallium	0.1 mg/m^3 0.1 mg/m^3	15 mg/m3	Nausea, diarrhea, abdominal pain, vomiting; ptosis, strabismus; peri neuritis, tremor; retrosternal tightness, chest pain, pulmonary edema; convulsions, chorea, psychosis; liver, kidney damage; alopecia; paresthesia legs	Inhalation, skin absorption, ingestion, skin and/or eye contact	Eye: Irrigate immed. Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
Zinc	5mg/m^3 0.2 mg/m^3	500 mg/m3	Metal fume fever: chills, muscle ache, nausea, fever, dry throat, cough; lassitude (weakness, exhaustion); metallic taste; headache; blurred vision; low back pain; vomiting; malaise (vague feeling of discomfort); chest tightness; dyspnea (breathing difficulty), rales, decreased pulmonary function	Inhalation	Breathing: Respiratory support

Raney Nickel	**1 mg/m^3/none established**	***10 mg/m3***	**May cause allergic skin reaction. Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing**	**Inhalation, skin absorption, ingestion, skin and/or eye contact**	**Eye: irrigate immed. Also under eyelids for at least 15 minutes. Skin: soap wash promptly for at least 15 minutes. Breath: move to fresh air, if difficulties continue, provide oxygen Swallow: DO NOT induce vomiting. immed. Medical attention**

CA-No IDLH promulgated. CA- OSHA Value

The OSHA PEL for coal tar pitch volatiles is 0.2 mg/m^3.

4.3 Task Specific Hazard Analysis

Task	Potential Hazard	Precautions
Mobilization to site	**A) Physical Hazards** 1. Road Safety 2. Improper Lifting – Sprains, Strains 3. Electrical from utility hookup 4. Trip/Fall hazards 5. Hand Tool Safety 6. Vehicle - Struck By **B) Biological Hazards** • None **C) Chemical Hazards** • None	**1. Expect the other driver to do the unexpected. Drive with care and consideration. Your life depends on it.** **2.** Follow carefully all lifting procedures. Single lifter not to exceed 50 lbs. **3.** Use qualified electrician to do hook up. Have GFCI installed for power tool use. **4.** Where Possible, clear access to areas where work is to be performed **5.** Inspect tools carefully prior to using. Discard any chipped, cracked or otherwise damaged tools **6.** Use of traffic control signs and MUTCD codes is required while performing roadwork.

Soil Excavation and Loadout	**A) Physical Hazards** 1. Excavation cave-in 2. Contact with utilities 3. Trip/Fall Hazards 4. Heavy Equipment 5. Vehicle Traffic 6. Undermining building foundation.	1. Follow JMC excavation safety SOP 2. Perform utility markouts 3. Maintain safe distances 4. Support utilities in excavation 5. Hand excavate to verify utility location 6. Keep access-ways clear of debris. 7. Keep out of swing radius and pinch points 8. Use three point mount and dismount 9. Wear traffic vests outside of barricaded work zones 10. Follow Engineer recommendations when excavating near building foundation, including benching, sloping, and/or shoring.
	B) Biological Hazards 1. Poisonous plants 2. Biting/ stinging insects	1. Plants such as poison sumac, oak and ivy may be present. Use Tyvek and/ or barrier cream when doing bush-work 2. Eliminate stinging insects with insecticides
	C) Chemical Hazards 1. Contact with contaminated materials 2. Hazardous atmospheres	1. Wear PPE specified in HASP 2. Perform air surveillance specified in HASP 3. Follow decontamination procedures

Backfilling & Site Restoration	**A) Physical Hazards** Heavy Equipment **B) Biological Hazards** None Significant **A) Chemical Hazards** None Significant	1. Keep out of swing radius and pinch points 2. Use three point mount and dismount 3. Wear traffic vests when working within 15 ft or roadway.
Demobilization	**A) Physical Hazards** 1. Improper Lifting **B) Biological Hazards** 1. None **C) Chemical Hazards** • None	3. Follow carefully all lifting procedures. Single lifter not to exceed 50 lbs

5.0 PERSONNEL TRAINING REQUIREMENTS

5.1 General

Site personnel must be trained in accordance with OSHA's 29 CFR 1910.120 Hazardous Waste Operations and Emergency Response Standard. At a minimum, personnel are required to be trained to recognize the hazards on-site, the provisions of this HASP, and the personnel responsible for safety on the site.

5.2 Pre-Assignment and Annual Refresher Training

Prior to arrival on site, JMC and each subcontractor will be responsible for certifying that his/her employees meet the requirements of pre-assignment training, consistent with OSHA 29 CFR 1910.120 paragraph (e)(3). JMC and each subcontractor must be able to provide a document certifying that each general site worker has received 40 hours of off-site instruction. The Site Health and Safety Officer will maintain documentation verifying that OSHA-mandated health and safety training requirements have been met.

Any person who is going to enter the contamination reduction zone or exclusion zone will have completed a 40-hour training course as required by 29 CFR 1910.120 (OSHA), plus three days of actual field experience under the direct supervision of a trained and experienced supervisor. Site personnel must also receive 8 hours of refresher training annually.

5.3 Site Supervisor Training

Consistent with OSHA 29 CFR 1910.120 paragraph (e)(4), individuals designated as Site Supervisors receive an additional 8 hours of training.

5.4 Health and Safety Plan Review and Site Specific Training

Prior to working on the site, each person will review the HASP and will have the opportunity to ask questions of the Site Health and Safety Officer about the plan's contents. After reviewing the HASP, JMC employees and subcontractor employees will sign the HASP Review Sign-Off (Safety Briefing form) located in Attachment A. Employees will then be instructed on proper dressout and decontamination procedures without exception.

5.5 Daily Site Safety Meetings

Site safety meetings will be conducted daily. The meeting will cover:

- the work to be completed;
- hazards associated with the work; and,
- hazard control measures to be implemented.

JMC subcontractor employees and their supervisor(s) are required to attend.

6.0 PERSONAL PROTECTIVE EQUIPMENT

This section describes the specific levels of protection required for each task to be conducted at the site. The general requirements of the EPA designated Levels of Protection (A-D) are described in the JMC Corporate Health and Safety Program Manual. The level of protection to be worn by field personnel will be monitored by the SHSO.

6.1 Specific Levels of Protection Planned for the Site

PPE selection is both task-specific and responsive to air monitoring data. Table 6.1 (below) lists task specific PPE levels. These levels are disqualified for use if air monitoring indicates that the upper action limit for the level of protection being used is exceeded. Start the task in the PPE

listed in the far left column. Once sufficient air monitoring data has been collected, downgrades to PPE levels in the right hand columns may be instituted.

Table 6.1: Levels of Protection

Location	Job Function/Task	Initial Level of Protection		
Support Zone	Project Management Activities Material Storage	D D		
Contamination Reduction Zone (CRZ)	Equipment Decontamination Decontamination of personnel	D+ D+		
Exclusion Zone	Contaminated soil excavation/ handling with dust monitoring data below action limit..... ..... Contaminated soil excavation/ handling with dust monitoring data above action limit.....	D+ C		

Adherence to the specified level of protection is the responsibility of the Response Manager and the Site Safety Officer. The HSM will evaluate work practices, air quality, and other factors in making this determination.

6.2 Ensemble Components

The components included in each level of PPE and explanations for their use are presented as follows:

6.2.1 Level C

Level C shall consist of the following items:

- MSA Full face air purifying cartridge respirator with P100 Cartridges.
- Steel-toed boots
- Boot covers
- Hard hat
- Saranex (liquid resistant) coveralls for work with wet materials
- Tyvek or equivalent for dry materials

- Thin mil PVC or latex inner gloves
- Leather outer gloves
- Hearing protection around heavy equipment

6.2.2 Level D+

This is the basic work uniform and shall consist of the following items:

- Tyvek or equivalent for dry materials
- Thin mil PVC or latex inner gloves
- Leather outer gloves
- Hard hat
- Safety glasses
- Steel-toed boots
- Boot covers
- Hearing protection (as applicable)
- Traffic vests (Type II) as appropriate

6.2.3 Level D

This is the basic work uniform and shall consist of the following items:

- Hard hat
- Safety glasses
- Steel-toed boots
- Boot covers
- Hearing protection (as applicable)
- Traffic vests (Type II) as appropriate

6.3 Application

Table 6.1 details the anticipated levels of protection for different tasks. However, site developments may prompt changes in the levels of PPE. Proper notification of the SHSO, HSD, and JMC Response Manager is required to ensure continued safe operations.

NO CHANGES TO THE SPECIFIED LEVELS OF PROTECTION SHALL BE MADE WITHOUT THE KNOWLEDGE AND APPROVAL OF THE HEALTH AND SAFETY MANAGER, JMC SITE HEALTH AND SAFETY OFFICER, AND THE JMC RESPONSE MANAGER.

6.4 Inspection

Before personal protective equipment is worn within the exclusion zone, it will be properly inspected by its user. The JMC SOP pertaining to inspection of PPE provides guidelines and a checklist for the visual inspection of respiratory protective equipment and chemical protective clothing.

7.0 MEDICAL SURVEILLANCE REQUIREMENTS

7.1 General

JMC utilizes a Medical Monitoring Program designed to determine each employee's health status and fitness (including the ability to utilize respiratory protection) for working at hazardous waste sites. JMC personnel involved in hazardous waste site activities are required to undergo baseline, annual, and site specific examinations, as necessary. JMC utilizes the services of physicians experienced in occupational medicine and the effects of toxic industrial substances. Medical surveillance records for JMC employees are retained for the length of employment plus 30 years.

JMC and subcontractor personnel involved in work activities with potential exposure to contamination by any route of exposure are required to participate in a Medical Monitoring Program. Workers must undergo a pre-work baseline or annual examination no more than 12 months prior to participation in on-site field activities. Workers must undergo follow-up examinations at 12 month intervals, or upon conclusion of the remediation project.

Subcontractors involved in work activities in the contamination reduction zone (decontamination zone) or exclusion zone shall provide medical monitoring for their employees and shall utilize physicians experienced in occupational medicine and the effects of toxic industrial substances. JMC employees who are terminating their employment with JMC, whether voluntarily or involuntarily, must undergo an exit physical. The physical exams required as part of the Medical Monitoring Program are described in detail in the JMC Health and Safety Manual for Hazardous Waste Site Activities.

7.2 Specific Medical Monitoring Measures

Physiological monitoring for heat stress will be performed in accordance with the JMC Heat Stress SOP.

8.0 AIR SURVEILLANCE

8.1 General

This section specifies the surveillance activities that will take place during the project. Air surveillance objectives include:

- Characterizing breathing zone (BZ) concentrations of toxic substances for comparison with Action Limits; and,
- Determining the appropriateness of respiratory protective equipment.
- Monitoring dust control effectiveness

8.2 Monitoring During Operations

Routine air monitoring will be conducted and maintained in the Air Monitoring Sheet (see attachment A) as a part of daily operations. Guidelines for conducting this monitoring are as follows:

- During daily operations to document site conditions
- When the possibility of an IDLH condition or flammable atmosphere has developed
- When work begins at a different area of the site
- If new areas of contamination are discovered or if contaminants other than those previously identified are handled
- Prior to and continuously during permit required confined space entries
- When a new operational procedure is introduced
- When special or unusual conditions warrant this action as determined by the SHSO

8.3 Location of Monitoring Activity by Parameter

Air monitoring is to be conducted under worst case and average conditions to represent the range of anticipated exposures. The schedule is presently envisioned as follows:

Mini-Ram or equivalent dust monitor – these measurements will commence when soil excavation occurs. Mini-ram measurements will be made hourly during excavation activities.

Measurements will be made in employee breathing zones and at the work zone perimeter.

8.4 Implementation

The JMC SHSO is responsible for:

- Daily calibration of instruments;
- Documentation of calibration, instrument readings and site conditions/activities during monitoring;
- Directing activities with regard to air monitoring results; and
- Communicating results to employees.

8.5 VOC Monitoring, Response Levels and Actions

Volatile organic compounds (VOCs) will be monitored at the downwind perimeter of the immediate work area (i.e. - the exclusion zone). Upwind concentrations beyond the work zone will be measured at the start of each workday and periodically thereafter to establish background conditions. The monitoring work will be monitored using a photo-ionization detector (PID). A PID is an air monitoring instrument which provides fast and accurate readings of organic vapors. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities will be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities will resume with continued monitoring.

If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities will be halted, the source of vapors identified, corrective actions taken to abate or otherwise handle vapors, and monitoring continued. After taking corrective action, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

If the organic vapor level is above 25 ppm at the perimeter of the work area activities will be stopped until the situation can be evaluated and safely restarted.

15-minute readings will be recorded and be available for JMC personnel to review. Instantaneous readings, if any, used for decision purposes will also be recorded.

8.6 Air Particulate Real Time Monitoring

PCBs have low volatility in air, and therefore, releases to the atmosphere via volatilization are not of concern. However, since PCBs can be transported via dust, prevention of PCB migration will be handled using dust control methods.

Particulate concentrations will be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring will be performed using DataRam or equivalent real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. A DataRam is a real-time air monitoring instrument which collects instantaneous dust particulates and averages the amount of dust particles over a selected timeframe. This instrument is utilized to determine whether dust suppression measures are necessary. In addition, fugitive dust migration will be visually assessed during work activities.

If the downwind PM-10 particulate level is 100 micrograms per cubic meter (ug/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques will be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 ug/m^3 above the upwind level and provided that no visible dust is migrating from the work area. The Action Level for airborne dust is based on the USEPA 24-hour National Ambient Air Quality Standard (NAAQS) for PM-10 particulate of 150 ug/m^3.

If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 ug/m^3 above the upwind level, work will be stopped and a re-evaluation of activities initiated. Work will resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 ug/m^3 of the upwind level and in preventing visible dust migration.

Table 8.1: Instruments and Action Levels		
Instrument/Method	**Action Level**	**Specific Action**
VOCs		
PID	>5 ppm / 15 min.	Halt work, confirm levels
	>25 ppm	Halt work, take corrective action
AIR PARTICULATES		
MiniRam	≥ 100 ug/m3 sustained at work zone perimeter for 2 minutes > 150 ug/m3	Implement Level C PPE and dust control measures and increase monitoring frequency Stop work, take corrective action

8.7 Air Sampling

Personal air sampling will not be necessary unless action levels for upgrading to Level C are exceeded.

9.0 SITE CONTROL MEASURES

9.1 Control Zones

The Response Manager has been designated to coordinate access control on the work site. No unauthorized person shall be allowed beyond the contamination control line. During activities in the exclusion zone, the implementation of a buddy system is mandatory. Level B operations require a minimum of three people.

Figure 9-1 Control Zones

Drawing(s) to be prepared and kept on site.

Standing orders for the exclusion zone and contamination reduction zone are presented below:

Standing orders for the exclusion zone and contamination reduction zone are as follows:
• No smoking, eating, or drinking in these zones. Eating, drinking, chewing gum or tobacco, smoking, or any practice that increases the probability of hand-to-mouth transfer and ingestion of any material is prohibited in any area designated as a contamination reduction zone or exclusion zone.
• No matches or lighters in these zones.
• Check-in on entrance to the contamination reduction zone. Check-out on exit from this zone. Entrance and exit locations shall be designated and emergency escape routes delineated. Warning signals for site evacuation have been established.
• Implement the communications system. Communications using radios, hand signals, signs, or other means shall be maintained between work crew members at all times. Emergency communication shall be prearranged in case of radio failure, necessity for evacuation off site, or other reasons.
• Maintain visual contact between exclusion zone entrants.
• Wear the appropriate level of protection as defined in the site specific Health and Safety Plan.
• Work will be performed during daylight hours unless adequate lighting is available.
• Contact with known or suspected contaminated surfaces should be avoided. Whenever possible, there will be no walking through puddles or discolored surfaces; kneeling on ground; or leaning, sitting or placing equipment on drums, containers, or the ground.
• Prescribed drugs should not be taken by personnel where the potential for absorption, inhalation, or ingestion of toxic substances exists, unless specifically approved by a qualified physician.
• Respirator wearers must be certified as being capable of wearing respiratory protection (physician's approval, fit tested) while performing their assigned tasks. Respirator wearers must have been fit tested, within the past 12 months, with the make and size respirator to be worn. No facial hair is allowed that would interfere with respirator fit.
• Work areas for operational activities shall be clearly established and clearly delineated in the site specific Health and Safety Plan.
• Work areas and decontamination procedures shall be established based on expected site conditions and clearly delineated in the site specific Health and Safety Plan.
• All workers must provide copies of up to date OSHA Hazwoper training, respirator use and respirator fit test. (See certification list in attachment A)

Personnel and equipment in the exclusion zone(s) will be minimized, consistent with effective site operations.

9.2 Site Communications Plan

Hand signals, radios, and telephones are the modes of communication to be used at the site. Hand signals will be reviewed by the Site Response Manager with site personnel prior to the start of the project and periodically at daily safety meetings. Standard hand signals include:

ACTION	MEANING
Hands around throat	- out of air/can't breathe
Thumbs up	- OK/yes
Thumbs down	- negative, no
Hands on top of head	- need assistance
Grip partner's wrist/waist	- leave area immediately

When working in the exclusion zone, personnel will not be allowed to work alone. The buddy system will be in place to provide aid in case of an emergency.

The Response Manager is responsible for the management of communications during normal and emergency operations.

9.3 Sanitation Facilities

Portable sanitation facilities will be maintained in the support zone at a frequency of one porta-john per 10 employees. Potable and non-potable water will be marked accordingly.

10.0 Decontamination Plan

Decontamination of equipment and personnel will be performed to limit the potential migration of contaminants outside the exclusion zone. Major equipment (machines) and personnel will be decontaminated prior to leaving the exclusion zone.

10.1 Levels of Decontamination Protection Required for Assisting Personnel

The level of protection required for personnel assisting with decontamination will be one level below the individual being decontaminated. The Site Health and Safety Officer is responsible for monitoring decontamination procedures and determining their effectiveness.

10.2 Equipment Decontamination

10.2.1 Sampling Equipment

Sampling equipment will be decontaminated in accordance with the SOP provided in the Quality Assurance Project Plan (QAPP). The QAPP for this project is provided in the E&M Plan prepared for the Arsynco, Inc. remedial program. Decontamination fluids will be collected and disposed of according to the Site Work Plan. A sampling equipment decontamination area will be established which will prevent the release of contaminated decontamination fluids.

10.3 Personnel Decontamination

10.3.1 Procedure

Site personnel should minimize contact with contaminants in order to minimize the need for extensive decontamination. Personnel decontamination will be conducted in the decontamination zone. Gross decontamination for PPE Level D+ will include:

1. Remove coverall (dry rollout)
2. Remove Boot covers (dry roll-out)
3. Remove outer gloves
4. Remove Hard Hat and Hang
5. Remove outer suit
6. Remove Inner Gloves
7. Conduct hand and face washing

10.3.2 Equipment

Equipment to be removed from the zone will be wet wiped as it is prepared for storage.

Heavy equipment will be pressure washed with water before leaving the site. Cab interiors will be wet wiped.

10.4 Disposition of Decontamination Wastes

Equipment used for decontamination shall be decontaminated or disposed of properly. Aqueous liquids will be disposed of according to the Site Work Plan. All disposable PPE will be containerized and properly disposed.

10.5 Emergency Decontamination Procedures

Section 11.8 details emergency decontamination procedures.

11.0 EMERGENCY RESPONSE PLAN

This Emergency Response Plan has been prepared to define the responsibilities, resources and actions necessary to respond to uncontrolled releases of contaminated materials and injury to personnel.

11.1 Pre-Emergency Planning

This Emergency Response Plan will be reviewed and revised on a regular basis (if necessary) by the SHSO. This will ensure that the plan is adequate and consistent with prevailing site conditions.

During the daily safety meetings, employees will be trained in and reminded of the provisions of the Emergency Response Plan, communication systems, and evacuation routes.

Local emergency medical, fire, and police resources will be identified.

11.2 Personnel Roles and Lines of Authority

The Response Manager has primary responsibility for responding to and correcting emergency situations. This includes taking appropriate measures to ensure the safety of site personnel and the public. Possible actions may involve evacuation of personnel from the site area, and notifying local authorities for the evacuation of adjacent residents. The Response Manager is additionally responsible for ensuring that corrective measures have been implemented, appropriate authorities notified, and follow-up reports completed. The SHSO may be called upon to act on the behalf of the Response Manager, and will direct responses to any medical emergency.

The individual subcontractor organizations are responsible for assisting the Response Manager in his/her mission within the parameters of their scope of work.

11.3 Emergency Recognition/Prevention

Section 4.0 identifies the chemical and physical hazards on site. Additional hazards that may result from site activities are listed in Table 11.1. This table also lists prevention and control techniques/mechanisms. Personnel will be familiar with techniques of hazard recognition from pre-assignment training and site specific briefings. The SHSO is responsible for ensuring that prevention devices or equipment are available to personnel.

Table 11.1: Emergency Recognition/Control Measures

Potential Hazard	Prevention/Control	Location of Response Equipment
Fire	• Fire Extinguisher (15 lb dry chemical) • Fire Extinguisher (5 lb dry chemical) • %LEL monitoring • Ignition source control • Hot work permit	• Fuel Tank • Each piece of heavy equip.
Spill	• Berms/Dikes • Sorbent Materials • Visqueen	• Storm water drains • CRZ area • Next to potential release points
Air Release • Particulates	• Water spray in misting applications • Keep excavated soil covered	• In the exclusion zone, • next to potential release points

11.4 Emergency Equipment/Facilities

Figure 9.1 identifies the location of the following emergency equipment:

- First aid kit
- Fire extinguishers
- Telephone
- Eye wash

The following safety equipment and materials will be maintained on site, near the exclusion zone:

Safety Equipment

Number	Item
1	Industrial First Aid Kit, Maintained in the decontamination area
1	Portable Eye Wash to be maintained accessible to work areas such that time of travel is less than 1 minute (15 minutes to flush)
Multiple	Fire Extinguishers

11.5 Evacuation Routes/Procedures

In the event of an emergency which necessitates an evacuation of the site, the following procedures will be implemented:

Evacuation alarm notification should be made using one long blast on the air horn. All personnel should evacuate if possible, upwind of any activities. A predetermined off-site location (rally point) has been identified for a personnel head count in case of an emergency.

Personnel will be expected to proceed to the closest exit and mobilize to the safe distance area associated with the evacuation route. Personnel will remain at that area until the Response Manager or SHSO provides further instructions.

The Response Manager is responsible to obtain the daily sign in sheet to account for all personnel at the rally point.

Evacuation drills will be implemented periodically, documented and filed with the Health and Safety manuals kept on-site.

Evacuation routes for the site and the immediate area are depicted on Figure 9.1 in attachment A. This figure also indicates the rally point in the event of a major incident.

11.6 Emergency Communications

At the work site, an air horn shall be made available to sound one long blast if evacuation of the work area is required. The following hand signals will be recognized by each site worker:

Signal	Meaning
Grip partner's wrist	Leave area immediately and report to staging area
Hand on top of head	Need assistance
Thumbs up	OK; I'm all right, I understand
Thumbs down	No; negative
Three short blasts of air horn	Evacuate work area safely

11.7 Emergency Contact/Notification System

Spills of contaminated liquids or solids on site soils or waters will immediately be reported to the JMC Response Manager. Spills which are potentially reportable include:

1.	Quantities sufficient to produce a sheen, discoloring, or potential contamination of site waters
2.	Liquid quantities which produce surface "pooling" or "puddling" effects
3.	Solids misplaced during handling or transport operations

Notification requirements may include the following:

1.	A site meeting with Site Response Manager
2.	A telephone call to the National Response Center in Washington, D.C. or to the appropriate State officials if the spill has the potential to affect the surrounding population.

If necessary, the JMC Site Representative will provide the following information to federal and state authorities:

1.	Name, address, and telephone number of person reporting
2.	Details regarding the party responsible for the incident
3.	Date and time the incident occurred or was discovered

4.	Specific location of the spill
5.	Name of material spilled or released
6.	Source of spilled material
7.	Estimated quantity spilled or discharged
8.	Cause of the release
9.	Weather conditions
10.	Number and type of injuries or fatalities (if applicable)
11.	Whether evacuations have occurred
12.	Estimated dollar amount of property damage
13.	Description of cleanup action taken and future plans

Federal and state laws require immediate notification upon discovery of a spill or following timely spill source control, containment, and countermeasures. However, spill source control and initiation of spill containment activities may at times take priority over notification of federal and state authorities.

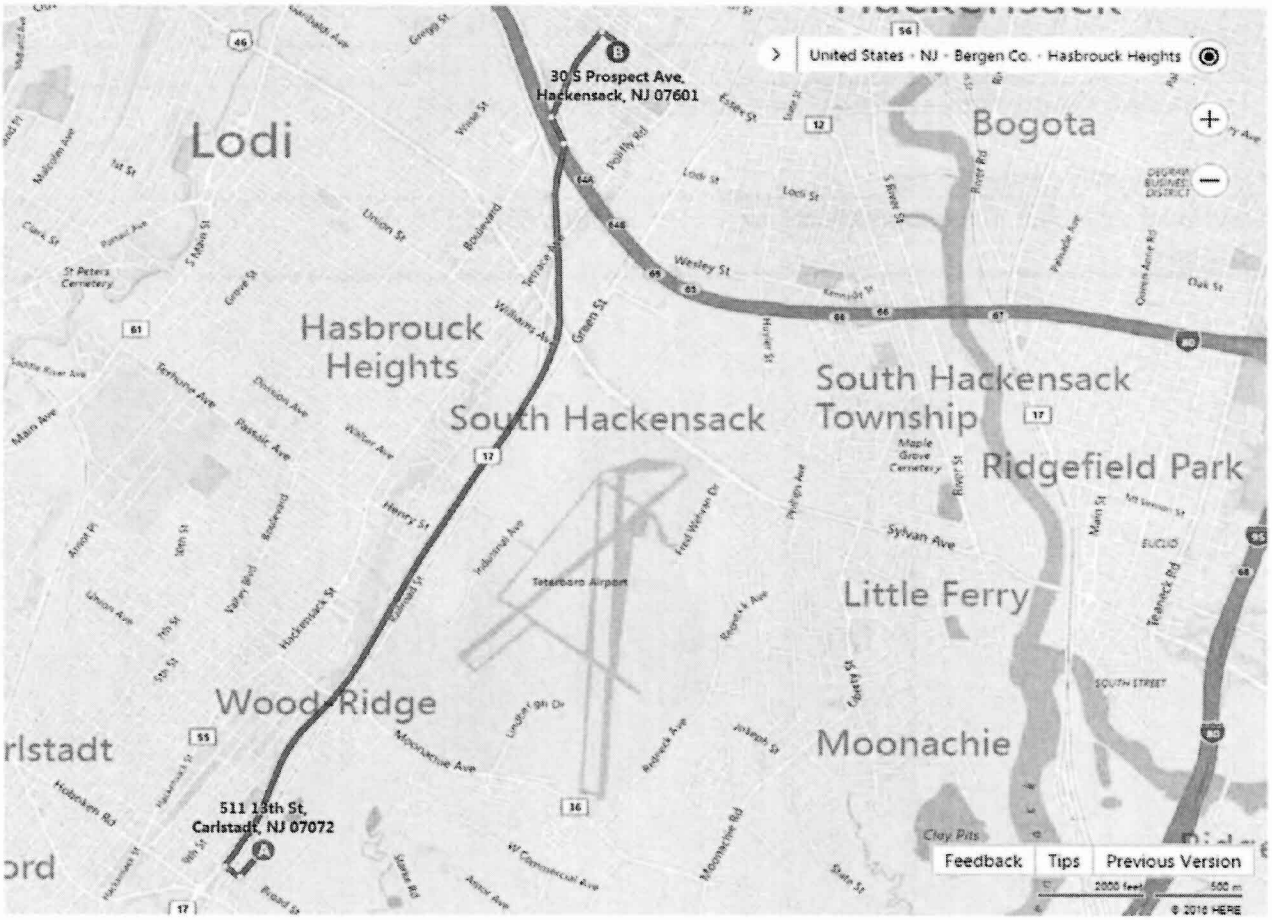
Table 11.2 provides names and telephone numbers of emergency assistance organizations. A copy of this table will be posted and or located in the site trailer and in permanent site vehicles. In the event of a fire or spill, the Site Response Manager will notify the appropriate local, state, and federal agencies. In the event of a medical emergency, personnel will take direction from the SHSO and notify the appropriate emergency organization.

Table 11.2: Emergency Assistance Telephone List

Emergency Assistance Organization	**Telephone Number**	
Hackensack University Hospital 30 Prospect Avenue Hackensack, NJ 07601	201-996-2000	
Ambulance/Rescue Squad	911	
Fire	911	
Local Police	911	
	Land Line	Cell Phone
JMC Response Mgr	732-295-2144	732-598-1065
JMC Program Mgr	732-295-2144	908-963-3965
JMC H&S Director	732-295-2144	908-963-3965
JMC Office	732-295-2144	

Jim Dillon	201-935-4890 201-870-2881
EPA National Response Center	1-800-424-8802
Center for Disease Control Hotline	(888) 232-6348
Chemtrec (24 hours)	(800) 262-8200
EPA (RCRA - Superfund Hotline)	1-800-424-9346
U. S. Coast Guard National Response Center (NRC) (Oil/Hazardous Substances)	(800) 424-8802
National Pesticide Telecommunications Hotline	(800) 858-7378

Route to Hospital



11.8 Emergency Medical Treatment Procedures

Any person who becomes ill or injured in the exclusion zone must be decontaminated to the maximum extent possible. If the injury or illness is minor, full decontamination should be completed and first aid administered.

In the event of an injury requiring more than minor first aid, or any employee reporting any sign or symptom of exposure to hazardous substances, immediately take the victim to a local emergency medical provider. In the event of life-threatening or traumatic injury, implement appropriate first aid and immediately call for emergency medical assistance.

If the patient's condition is serious, at least partial decontamination should be completed (i.e., complete disrobing of the victim and redressing in clean coveralls or wrapping in a blanket). First aid should be administered while awaiting an ambulance or paramedics.

When an individual(s) is being transported to a clinic or hospital for treatment, the Response Manager, or SHSO should ensure that information on the chemical(s) the individual(s) have been exposed to at the site is taken. This information; which is included in Section 4.0, could also be given to the hospital during site set-up activities. Any vehicle used to transport contaminated personnel will be treated and cleaned as necessary.

11.9 Fire or Explosion

In the event of a fire or explosion, the local Fire Department should be summoned immediately. Upon their arrival, the Response Manager or designated alternate will advise the fire commander of the location, nature, and identification of the hazardous materials on site.

The SHSO shall act as the designated site emergency coordinator and shall have final authority for initial response to on-site emergency situations. Upon arrival of the appropriate emergency response personnel, the SHSO shall defer all authority but shall remain on the scene to provide assistance, if necessary. At the earliest opportunity, the SHSO shall contact the Response Manager.

JMC employees may fight incipient stage fires using portable fire extinguishers. Employees must retreat from fires that endanger egress and/ or fires that involve containers of hazardous materials.

11.10 Spill or Leaks

In the event of a spill or a leak, site personnel will:

- Inform the Response Manager immediately
- Locate the source of the spillage and stop the flow if it can be done safely
- Begin containment and recovery of the spilled materials
- Report the incident to JMC management for further instructions

If a spill occurs and safe re-entry is possible, containment procedures will begin. Simultaneously, the source of the spill will be stopped if it is still releasing material. Once containment is complete, cleanup will begin. The priority for containment and cleanup will be the prevention of material reaching surface waters. The JMC representative will be responsible for any reporting procedures that are required as a result of the spill.

12.0 Biological Hazards

Biological hazards that may be found on site include insects, such as ticks, mosquitoes, spiders, centipedes, poisonous snakes, vermin, and hazardous plants. Depending on the season and weather, the hazards vary. For instance, during cold weather many animals and insects are not active and most plants are dormant. Employee awareness and the safe work practices outlined in the following paragraphs should reduce the risk associated with these hazards.

12.1 Hazardous Plants

During the conduct of site activities the number and variety of hazardous plants that may be encountered is large and extensive. The ailments associated with these plants range from mild hay fever to contact dermatitis, to carcinogenic affects. However, the plants which present the greatest degree of risk to site personnel (i.e., potential for contact vs. affect produced) are those which produce skin reactions and skin and tissue injury.

The poisonous plants of greatest concern are poison oak, poison sumac, and poison ivy. Poison oak is mostly found in the southeast and west. Poison oak resembles poison ivy, with one important difference. The poison oak leaves are more rounded rather than jagged like poison ivy and the underside of poison oak leaves are covered with hair. Poison ivy thrives in all types of light and usually grows in the form of a trailing vine. However, it can also grow as a bush and can attain heights of 10 feet or more. Poison ivy has shiny, pointed leaves that grow in clusters of three. Poison sumac is a tall shrub or slender tree that usually grows along swampy areas or ponds in wooded areas. Each poison sumac leaf stalk has 7 to 13 leaflets that have smooth edges.

The skin reaction associated with contacting these plants is caused by the body's allergic reaction to toxins contained in oils produced by the plant. Becoming contaminated with the oils does not require contact with just the leaves. Contamination can be achieved through contact with other parts of the plant such as the branches, stems or berries, or contact with contaminated items such as tools and clothing. The allergic reaction associated with exposure to these plants will generally cause the following signs and symptoms:

- Blistering at the site of contact, usually occurring within 12 to 48 hours after contact;
- Reddening, swelling, itching and burning at the site of contact;

- Pain, if the reaction is severe;
- Conjunctivitis, asthma, and other allergic reactions if the person is extremely sensitive to the poisonous plant toxin.

If the rash is scratched, secondary infections can occur. The rash usually disappears in 1 to 2 weeks in cases of mild exposure and up to 3 weeks when exposure is severe. Preventative measures that can prove effective for most site personnel are:

- Avoid contact with any poisonous plants on site, and keep a steady watch to identify, report and mark poisonous plants found on site;
- Wash hands, face or other exposed areas at the beginning of each break period and at the end of each work day;
- Avoid contact with, and wash on a daily basis, contaminated tools, equipment and clothing;
- Barrier creams, detoxification/wash solutions and orally administered desensitization may prove effective and should be tried to find the best, preventative solution.

12.2 ANIMALS

Normally, wildlife will avoid people and areas where activities are ongoing. Small animals, such as raccoons, infected with rabies or when cornered, may become aggressive. When working, remain alert for likely locations that animals inhabit. Avoid nests, dens, and holes in the ground that may be the animal's home. If bitten by an animal, seek medical attention immediately. Do not try to capture the animal, you may only get other personnel bitten.

12.3 TICK BITES

The Center for Disease Control (CDC) has noted the increase of Lyme Disease and Rocky Mountain Spotted Fever (RMSF) which are caused by bites from infected ticks that live in and near wooded areas, tall grass, and brush. Ticks are small, ranging from the size of a comma up to about one quarter inch. They are sometimes difficult to see. The tick, season extends from spring through summer. When embedded in the skin, they may look like a freckle,

12.3.1 Lyme Disease

Lyme disease has occurred in 43 states, with the heaviest concentrations in the Northeast (Connecticut, Massachusetts, New Jersey, New York, Pennsylvania), the upper Midwest (Minnesota and Wisconsin), and along the northern California coast. It is caused by deer ticks and the lone star ticks which have become infected with spirochetes. Female deer ticks are about one quarter inch in size, and are black and brick red in color. Male deer ticks are smaller, and completely black. Lone star ticks are larger and chestnut brown in color.

12.4 Bees, Hornets And Wasps

Contact with stinging insects like bees, hornets and wasps may result in site personnel experiencing adverse health affects that range from mild discomfort to fife threatening. Therefore, stinging insects present a serious hazard to site personnel, and extreme caution must be exercised whenever site and weather conditions increase the risk of encountering stinging insects. Some of the factors related to stinging insects that increase the degree of risk associated with accidental contact are as follows:

- The nests for these insects are frequently found in remote wooded, grassy areas where many waste sites are located,
- The nests can be situated in trees, rocks, bushes or in the ground, and are usually difficult to see; Accidental contact with these insects is highly probable, especially during warm weather conditions when the insects are most active;
- If a site worker accidentally disturbs a nest, the worker may be inflicted with multiple stings, causing extreme pain and swelling which can leave the worker incapacitated and in need of medical attention;
- Some people are hypersensitive to the toxins injected by a sting, and when stung, experience a violent and immediate allergic reaction resulting in a life threatening condition known as anaphylactic shock;
- Anaphylactic shock manifests itself very rapidly and is characterized by extreme swelling of the body, eyes, face, mouth and respiratory passages;
- The hypersensitivity needed to cause anaphylactic shock can, in some people, accumulate over time and exposure; therefore, even if someone has been stung previously, and has not experienced an allergic reaction, there is no guarantee that they will not have an allergic reaction upon receipt of another sting.

12.4.1 Protective Measures

With these things in mind and with the high probability of contact with stinging insects, all site personnel will comply with the following safe work practices:

- If a worker knows that he is hypersensitive to bee, wasp or hornet stings, they must inform the SHSO of this condition prior to participation in site activities;
- All site personnel will be watchful for the presence of stinging insects and their nests, and will advise the SHSO if a stinging insect nest or presence of a swarm of bees is located or suspected in the area;
- Any nests located on site will be flagged off and site personnel will be notified of its presence;

- If stung, site personnel will immediately report the SHSO to obtain treatment and to allow the SHSO to observe them for signs of allergic reaction;
- Site personnel with a known hypersensitivity to stinging insects will keep required emergency medication on or near their person at all times.

12.5 Biting Insects

Many types of biting insects such as mosquitoes, flies and fleas may be encountered on site. The use of insect repellents will be encouraged by the SHSO if deemed necessary. The biting insects of greatest concern are spiders, especially the black widow and the brown recluse. These spiders are of special concern due to the significant adverse health effects that can be caused by their bite.

12.5.1 Black Widow Spider

The black widow is a coal black bulbous spider 3/4 to 1 1/2 inches in length, with a bright red hourglass on the under side of the abdomen. The black widow is usually found in dark moist locations, especially under rocks, rotting logs and may even be found in outdoor toilets where they inhabit the underside of the seat. Victims of a black widow bite may exhibit the following signs or symptoms:

- Sensation of pinprick or minor burning at the time of the bite;
- Appearance of small punctures (but sometimes none are visible);
- After 15 to 60 minutes, intense pain is felt at the site of the bite which spreads quickly, and is followed by profuse sweating, rigid abdominal muscles, muscle spasms, breathing difficulty, slurred speech, poor coordination, dilated pupils and generalized swelling of face and extremities.

12.5.2 Brown Recluse Spider

The brown recluse is brownish to tan in color, rather flat, 1/2 to 5/8 inches long with a dark brown "violin" shape on the underside. It may be found in trees, or in dark locations. Victims of a brown recluse bite may exhibit the following signs or symptoms:

- Blistering at the site of the bite, followed by a local burning at the site 30 to 60 minutes after the bite;
- Formation of a large, red, swollen, postulating lesion with a bull's eye appearance;
- Systemic affects may include a generalized rash, joint pain, chills, fever, nausea and vomiting; and pain may become severe after 8 hours, with the onset of tissue necrosis.

12.5.2-a Treatment for Spider Bites

There is no effective first aid treatment for either of these bites. Except for very young, very old or weak victims, these spider bites are not considered to be life threatening, however medical treatment must be sought to reduce the extent of damage caused by the injected toxins. If either of these spiders are suspected or known to be on site, the SHSO will brief the site personnel as to the identification and avoidance of the spiders. As with stinging insects, site personnel should report to the SHSO if they locate either of these spiders on site or notice any type of bite while involved in site activities.

12.3.1-a Symptoms

The first symptoms of Lyme disease are flu like chills, fever, headache, dizziness, fatigue, stiff neck, and bone pain. If immediately treated by a physician, most individuals recover fully in a short period of time. If not treated, more serious symptoms can occur.

12.3.1-b Treatment

If you believe that you received a tick bite, or if any of the signs and symptoms noted above appear, contact the SSO, who will authorize you to visit a physician for an examination and possible treatment.

12.3.1-c Protective Measures

Standard field gear (work boots, socks, and work uniform) provide good protection against tick bites, particularly if the openings are taped. However, even when wearing field gear, the following precautions should be taken when working in areas that might be infested with ticks:

- When in the field, check yourself often for ticks, particularly on your lower legs and areas covered with hair;
- Spray outer clothing, particularly your pant legs and socks, with an insect repellant that contains DEET;
- When walking in wooded areas, avoid contact with bushes, tall grass, or brush as much as possible;
- If you find a tick, remove it by pulling on it gently with tweezers;
- If the tick resists, cover the tick with salad oil for about 15 minutes to asphyxiate it, then remove it with tweezers,
- Do not use matches, a lit cigarette, nail polish or any other type of chemical to "coax" the tick out;
- Be sure and remove all parts of the tick's body, and disinfect the area with alcohol or a similar antiseptic after removal; and
- For several days to several weeks after removal of the tick, look for the signs of the onset of Lyme disease, such as a rash that looks like a bullseye or an expanding red circle surrounding a fight area, frequently seen with a small welt in the center;
- Also look for the signs of the onset of Lyme Disease, such as an inflammation which is visible in the form of a rash comprising many red spots under the skin, which appears 3 to 10 days after the tick bite.

ATTACHMENT A

HEALTH AND SAFETY FORMS

1. Accident/Incident Report
2. Daily Safety Meeting Form
3. Qualitative Respirator Fit Test and Inspection Form
4. Daily Safety Report
5. SSHP Change Authorization
6. SSHP Sign-Off
7. Air Monitoring Log
8. Figure 9-1 Evacuation Plan
9. Certification Sign-off

ACCIDENT REPORT

Personal & Background Information

1. Case Number
2. Soc. Sec. No.
3. Name *(Last name, first initial)*
5. Age
6. Sex ☐ M ☐ F
7. Branch
8. Job or Site Name
9. Job Number
11. Time of Accident
12. Shift Worked ☐ 1st ☐ 2nd ☐ 3rd ☐ O/T
13. Date of Accident Month | Day | Year / /
14. Date Reported Month | Day | Year / /
15. Number of Others Involved in Accident
16. Occupation at Accident Time
17. Regular Occupation
18. Number of Others Injured in Accident
19. Nature of Injuries (Bruise, Strain, etc.)
20. Injured Body Part (left index finger)
21. Names of Others Involved in Accident
22. Names of Others Injured in Accident

Accident Description and Related Information

23. Chemicals Involved in Accident
24. Exact Location of Accident *(Sketch on Back)*
25. On JMC Premises? ☐ Yes ☐ No
26. Activity Injured was doing at time of accident or illness *(operating backhoe, unloading drums, etc.)*
--Try to Identify job in three words
-- Use no more than 30 spaces
27. What Occurred (Use single line descriptive sentences to tell the story of what occurred)
28. Check Type of Accident *(Check one)*
☐ a. Struck by ☐ b. Struck against ☐ c. Contacted by ☐ d. Contact with ☐ e. Trapped in ☐ f. Caught on ☐ g. Caught between ☐ h. Same level fall ☐ i. Different level fall ☐ j. Strain/overexertion ☐ k. Exposure ☐ l. Other
29. Accident Agent *(Limit to 21 spaces)* (i.e., equipment, machine, hand tool)
30. Contact Agent *(Limit to 22 spaces)* (i.e., machine part or material contacting)

Analysis of Accident Causes

UNSAFE ACTIONS

31. What did employee do or fail to do that caused or contributed to accident? *(Check no more than 2, give details on reverse)*
☐ a. Operating without authority
☐ b. Failure to make secure
☐ c. Operating unsafe speed
☐ d. Failure to warn/signal
☐ e. Nullified safety device
☐ f. Used defective equipment
☐ g. Used equipment unsafely
☐ h. Used wrong tool
☐ i. Failure to make inoperative
☐ j. Riding hazardous equipment
☐ k. Took unsafe position
☐ l. Horseplay, distractive
☐ m. No protective equip. worn
☐ n. Unsafe job procedure
☐ o. No unsafe action
☐ p. Other

UNSAFE CONDITIONS

32. What condition of tools, equipment or job site caused or contributed to accident? *(Check no more than 2, give details on reverse)*
☐ a. Inadequate guard/Safety device
☐ b. Hazardous personal attire
☐ c. Inadequate warning system
☐ d. Fire or Explosion hazard
☐ e. Unsecured against movement
☐ f. Poor housekeeping
☐ g. Protruding object
☐ h. Close clearance/congestion
☐ i. Hazardous arrange/storage
☐ j. Defective tools/equipment
☐ k. Atmospheric condition
☐ l. Illumination/noise
☐ m. Other unsafe condition
☐ n. No unsafe condition

33. What caused or influenced unsafe actions you identified above? *(Answer only if item 32 applies. Check no more than 2)*
☐ a. Unaware of job hazards
☐ b. Inattention to hazard
☐ c. Unaware of safe method
☐ d. Low level job skill
☐ e. Tried to gain or save time
☐ f. Tried to avoid extra effort
☐ g. Tried to avoid discomfort
☐ h. Influence of emotions
☐ i. Influence of fatigue
☐ j. Influence of intoxicant/drugs
☐ k. Defective vision
☐ l. Influence of illness
☐ m. Other personal factors
☐ n. Unknown personal factors

34. What caused or influenced unsafe condition you identified above? *(Answer only if item 33 applies. Check no more than 2)*
☐ a. Caused by employee
☐ b. Defective from normal use
☐ c. Defective via abuse/misuse
☐ d. Safety inspection failure
☐ e. Housekeeping/cleaning failure
☐ f. Faulty design/construction
☐ g. Inadequate illumination
☐ h. Preventive maintenance failure
☐ i. Defective tools/equipment
☐ j. Exposure to corrosion
☐ k. Extreme temperature
☐ l. Caused by other employees
☐ m. Other source cause
☐ n. Unknown source cause

35. What action has been taken *(Mark X box)* or is planned *(Mark P box)* to prevent recurrence: *(Mark no more than 5)*

X P
☐ ☐ a. Reinstruction of employee
☐ ☐ b. Reprimand/warning of employees involved
☐ ☐ c. Penalty discipline of employee involved
☐ ☐ d. Preventive instruction of others who do job
☐ ☐ e. Job reassignment of employee
☐ ☐ f. Improved inspection procedure
☐ ☐ g. Improved cleanup procedure
☐ ☐ h. Action to improve enforcement
☐ ☐ i. Order JSA done on job
☐ ☐ j. Order JSA revision
☐ ☐ k. Install safety guard against
☐ ☐ l. Require protective equipment
☐ ☐ m. repair/replace equipment
☐ ☐ n. Improve storage/arrangement
☐ ☐ o. Improve design/construction
☐ ☐ p. Eliminate congestion
☐ ☐ q. Use safer Materials/supplies
☐ ☐ r. Improve illumination/ventilation
☐ ☐ s. Mandatory pre-job instructions
☐ ☐ t. Correction other than above
☐ ☐ u. No action required

36. Immediate Supervisor *(Last name first, first initial)*
37. Employee's Signature

38. Investigated by *(Names and positions)* **Date**	**39. Reviewed and approved by** *(Name and position)* **Date**

Part 1. Accident Description and Direct Cause Analysis

1. What Occurred
Describe in sequence (1) relevant background information if any, (2) employee's location and position relative to immediate surroundings, (3) how employee was doing job, (4) what occurred that precipitated the accident, (5) the type of accident and contact agent.

2. Contributing "Unsafe" Action What did the injured (or other person) do or fail to do that contributed directly to accident? Be specific. *(Ex., Failed to use protective equipment, Failed to lock out machine)* *Don't report "Carelessness."*	**3. Contributing "Unsafe" Condition** What defective or otherwise unsafe conditions of tools, equipment, machines, structures or work equipment contributed directly to accident? *(Ex., Oil on floor, Broken or missing machine guard, Poor housekeeping)*

Part 2. Corrective Action Must Be Taken

4. Required Corrections
What corrective actions will be taken to prevent recurrence of accident? See Reverse Side, Item 35, for basic correction ideas.
(Ex., Job Safety Analysis (JSA), Training, Employee counseling, Machine Guarding)

Part 3. Witnesses

Part 4. Accident Location Sketch

N ↑

Part 5. Extent and Outcome of Injury/Illness

Lost Time Case	**Restricted Duty Case**
- Date Lost Time Began: ___/___/___ - Date Lost Time Ended: ___/___/___	- Date Restriction Began: ___/___/___ - Date Restriction Ended: ___/___/___ Restrictions:

Medical Treatment
- Name of Hospital or Clinic:

_____

- Name of Physician:

_____

Describe Treatment:

JMC ENVIRONMENTAL CONSULTANTS, INC.

DAILY SAFETY MEETING

Date: _____ Job Name: _____

1. Work to be completed: _____

_____

2. Hazards Associated with this work: _____

_____

3. Hazard control measures to be implemented: _____

_____

SAFETY TOPICS PRESENTED

Protective Clothing/Equipment: _____

_____

Chemical Hazards: _____

_____

Physical Hazards: _____

_____

Emergency Procedures: _____

_____

ATTENDEES

NAME PRINTED	**SIGNATURE**
_____	_____
_____	_____
_____	_____
_____	_____

Meeting Conducted by: _____
NAME PRINTED **SIGNATURE**

Supervisor _____

JMC ENVIRONMENTAL CONSULTANTS, INC.

RESPIRATOR FIT TESTING & INSPECTION

NAME _____ EMPLOYEE NO._____ DATE _____

TITLE _____ SERVICE CENTER _____

TEST/HOOD ENCLOSURE USED: _____ YES ____ NO

IRRITANT SMOKE FIT TESTING (Do Not Use an Enclosure):

No. of Squeezes	**Activity**	**Reaction**
_____	Initial	___ Yes ___ No
_____	Head/Neck Motion	___ Yes ___ No
_____	Motion/Talking	___ Yes ___ No
_____	Motion/Deep Breathing	___ Yes ___ No
_____	Total Squeezes	
Seal Obtained _____	Type of Cartridge used	_____
	Type of respirator	_____
	Size of respirator	_____

RESPIRATOR INSPECTION:

Head Straps ok / not ok Inhalation valves/stems/bodies ok / not ok

Face to Mask Sealing Surface ok / not ok Canister holder gasket/ threads ok / not ok

Exhalation valves/cover/stems/bodies ok / not ok Lens ok / not ok

Action Taken to Correct Deficiencies: _____

Fit Test/ Inspection performed by:_____ Date _____

Employee signature: _____ Date _____

JMC ENVIRONMENTAL CONSULTANTS, INC.

Daily Safety Report

Project: ARSYNCO, INC. PROPERTY		
Contract No.:	**JMC Project No.: 22126**	**Date:**
SHSO: Steven Kosch	**RM: Steven Kosch**	**Supervisor: James Clabby**
Site Conditions (weather, temp., soil conditions, etc.):_____		

Task/ Personnel/ PPE Matrix		
Task/Area	**Personnel**	**PPE Level**

Corrective Actions	
Unsafe Act/ Condition	**Corrective Action**

Signature:_____
Date:_____
SHSO

Attachments:
! Air Surveillance Log ! Accident Report ! Daily Safety Meeting ! Other ! None

JMC ENVIRONMENTAL CONSULTANTS, INC.

H&S Plan Change Authorization

Project Name: **ARSYNCO, INC.** Date:_____

Project Number: 22126

Description of Change:

Reason for Change:

Person requesting Change: Signature Date

Approved By (JMC Health and Safety Director) Signature Date

Attach sheets if necessary

SAFETY BRIEFING

Project Name: **ARSYNCO, INC.** Date:_____

The following personnel were present at the pre-job safety briefing and having read the Health and Safety Plan, are familiar with its provisions, and will abide by the procedures set forth in this plan:

Name	**Signature**

_____
Printed name of Site Supervisor or Site Health and Safety Officer

_____
Signature Date

Health and Safety Plan Sign-off

By signing below, I am indicating that I have read and agree to comply with the contents of the Site Specific Health and Safety Plan prepared for the Site.

Name	Signature	Company	Date

JMC ENVIRONMENTAL CONSULTANTS, INC.

Air Monitoring Log

Project Site:	**Project No.**	**Date:**
ARSYNCO, INC.	22126	

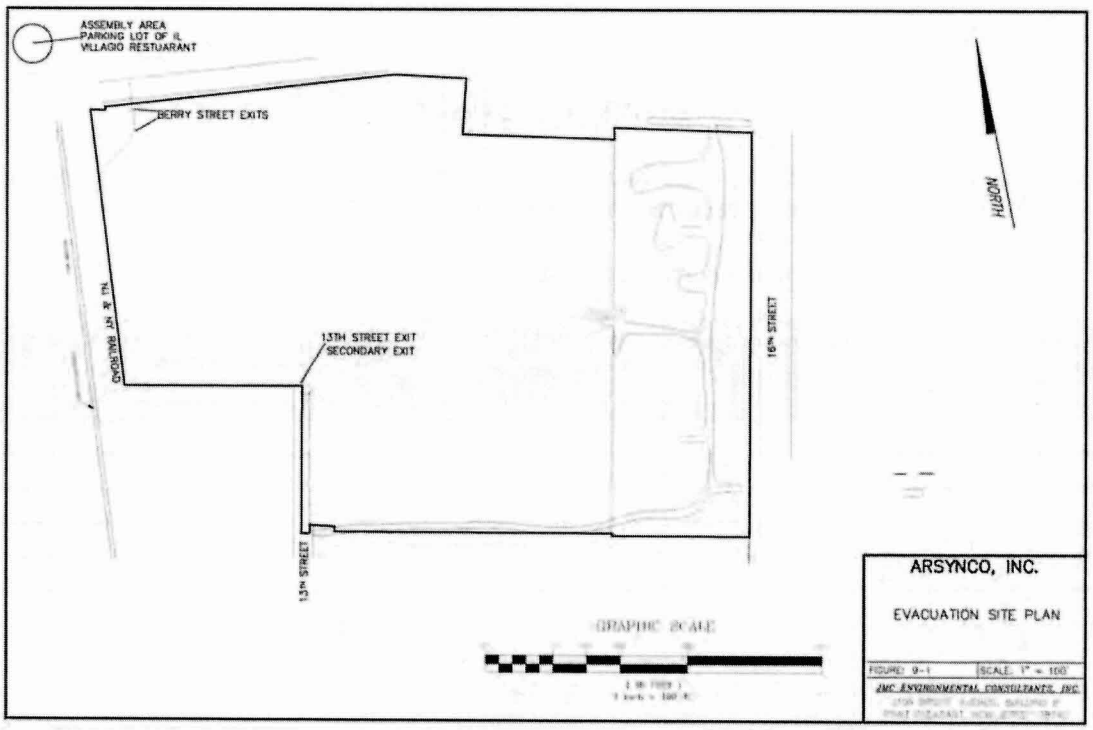
Level of Protection:	**Description of Site (e.g. weather, temp., soil conditions):**

Instrument:	**Instrument Response:**	**Location:**	**Time:**	**Comments:**

Calibration Data (e.g. type & gas concentration, instrument adjustments if any):

Additional Notes:

Signature:_____ Date:_____
(Health and Safety Officer)



SITE EVACUATION PLAN

Certification Sign-off

By signing below, I am indicating that I have been cleared medically for Respirator use, have a current fit test certificate and have an up to date Hazwoper certification.

(Copies of all certifications and fit tests will be kept on-site)

Name Please Print	OSHA Hazwoper	Cleared for Respirator	Date of Last Fit Test	Signature